

Actuator selection by associative function-structure-database

Background:

Actuators as mechatronic systems can comprise of e. g. control- and measurement sub-systems. To choose an actuator fitting best to the engineering task the (c)haracteristic-(p)roperty-dependencies are often missing.

The aim of research is to confine the range of solutions for actuator principles and structures in early stages of design process to a degree that is manageable for the following optimisation and es-pecially for the engineer.

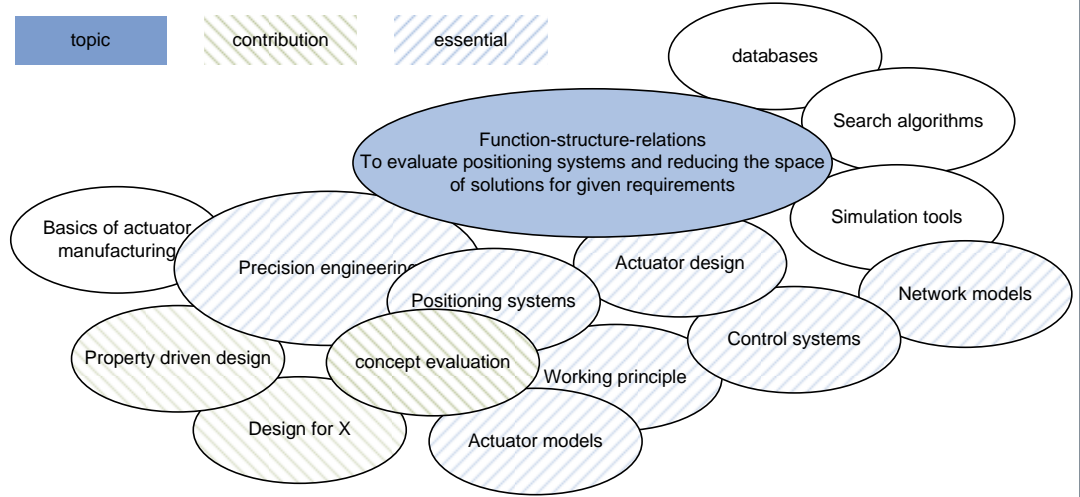


Fig.: ARC-Diagram

Research Question:

Are there any physical constraints for actuator parameters?
Are there any scaling effects which can be used for the selection of working principles?

Hypothesis:

The knowledge of c-p-dependencies enables trade off awareness and reduces the number of concept iterations.

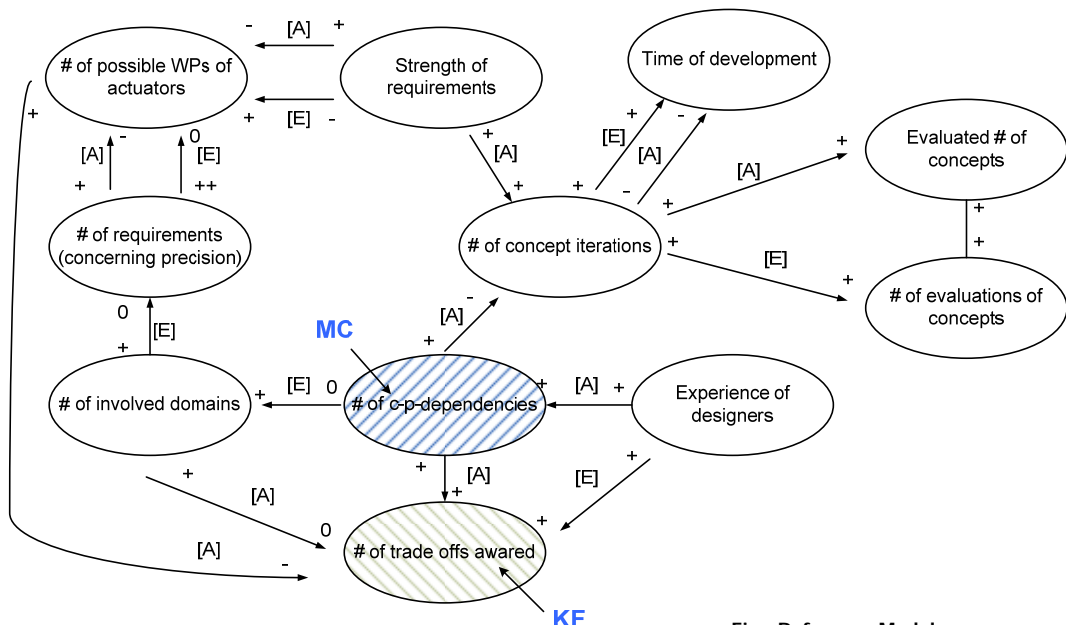


Fig.: Reference Model

Expected deliverables:

- multi-domain-description/model of known actuators
- approach how to take requirements according to precision in to account during the concept stage of design
- perception of scaling limitations in actuator design
- perception of trade offs

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